

Project Management RAID Guide

BEST PRACTICES FOR RISK, ASSUMPTIONS, ISSUES AND
DEPENDENCY MANAGEMENT



Topic	Page
RAID Management	5
Risk Management	13
Assumptions Management	15
Issues Management	36
Dependencies Management	46

*“Being a Project Manager is like being an artist, you have the different colored process streams combining into a work of art” , **Greg Cimmarrusti***

This book is intended to share some best practices for Project RAID Management. It is a free publication to share and hopefully in the future it can be added to and improved. Please treat it a draft for discussion document as I hope to improve with comments from readers.

I hope you find it useful.

Ken Martin

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*“Putting off an easy thing makes it hard. Putting off
a hard thing makes it impossible”*

– Charles E. Wilson

The management of Risks, Issues, Assumptions and Dependencies (RAID) in project management is an ongoing challenge for most organisations. I have produced this short guide to bring together some of the best practices together.

As with all the guides I produce, it is intended to provide a high-level view of these topics. The aim of this guide is not to go into depth on the different aspects of RAID management or into detail on the project management methodologies but just to highlight some of the RAID management aspects and best practices in project management.

-  Also this is no one size fits all and all approaches need to be customized for each organization but it should provide a reasonable framework for going forward.

 I have used word “Project” throughout the guide to avoid confusion between projects and programmes and to keep it simple although in many instances, programme would have been probably been more applicable.

I hope you find the book useful in assisting your own RAID management in projects and if it only acts as a sanity check and stimulates discussion of your own approach, then the book will have succeeded in its aim.

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Ken's Bio

Ken has over 30 years experience in the IT industry including over 12 years experience in financial services (payment services, insurance).

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For his Stakeholder Communications Consultancy, Ken creates IT change frameworks, governance processes, communication and training materials for previous clients on a contract basis.

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Ken is a currently a contract IT Change Manager working in London and the Far East.

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RAID Management

“Trying to manage a project without project management is like trying to play a football game without a game plan.”

— **K. Tate**

RAID Management

RAID

- RAID is an acronym for stands for Risks, Assumptions, Issues, and Dependencies which is the “bread and butter” for a project manager.
- Many project managers tend towards one of the areas (e.g.: risk management) rather giving equal focus to these four key areas as lack of focus on any one of these areas is a risk itself and can result in a negative affect and take a project off course.
- If there are actions that can be taken to avoid the consequences of an assumption not being true then it should be considered (and managed) as a risk.
- If an assumption cannot be changed then it should be considered (and managed) as a constraint
- If an assumption uses words like 'relies' or 'depends' then it should be considered (and managed) as a dependency which in itself should be managed as a risk.

Risks

- A risk is a possible future issue i.e. something that may go wrong. The definition of a risk is any specific event which might occur and thus have a negative impact on your project or program.
- Each risk has an associated probability of occurrence along with an impact on your project if it does materialise.
- This is the one key area that PM's do take focus upon in the managing and mitigating of risks.

Assumptions

- The definition of an assumption is something we set as true to enable us to proceed with our project.
- As part of the initial planning phase and project brief, assumptions are identified and documented but unfortunately many times they are just forgotten after this initial activity.
- A common assumption in many projects is that there will be access to the required specialist resources for the duration of the project.

- The purpose of tracking assumptions is that you need to be prepared for your assumptions being wrong.
- Most project plans are produced on this assumption but if this assumption turns out to be false then the project will falter.
- It is important to include all the assumptions that have identified into a Project Brief.
- Any assumptions made concerning the delivery of externally controlled deliverables should also be included.

PRINCE 2 Definition

A Risk is defined as uncertainty of outcome, whether positive opportunity or negative threat.

Issues

An issue is something that is going wrong now in a project are those things which has occurred, is current and have yet to be properly addressed.

RAID Log Best Practices

A general best practice is to keep RAID logs simple, use one centralised tool and to review them regularly at least once a week.

For example:

- A risk that has gone live and requires attention
- An unresolved question (e.g. from the Project Brief)
- New ideas or concerns
- Potential changes e.g. a requirement to change a deliverable

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- An unexpected event that has occurred e.g. a contractor going bankrupt
 - A problem that will impact on another project's objectives.
 - An issue is anything which arises on your project which you have to deal with to ensure your project runs smoothly.
 - Issues differ from risks in that they exist as a problem today, unlike risks which might turn into issues in the future.
 - Like risks, issues need to be managed through an agreed management process.

Issues can be resolved in a number of ways, for example:

- Cleared immediately with no action required
- Additional planning undertaken and new deliverables added or existing deliverables changed
- Issue becomes a risk, with an owner appointed and a countermeasure prepared.

Dependencies

- Dependencies are something that must be delivered to enable a project's delivery and these must be identified and tracked as they will impact on the project going forward and being successful.
- Dependencies form a key part of workload prioritisation during the programme and are a basic agenda item for any meetings and decision-points and as such must be consistent with all other aspects of the plans, projects and programmes.
- Dependencies exist when an output from one task or another project is needed as a mandatory input for another task or another project.
- It is a key responsibility for project managers to record, monitor, and manage these dependencies.
- Dependencies maybe items that are being delivered from elsewhere, and that may not be directly in the control of a project manager.
- Dependencies being not properly managed are quite frequently what cause project failure.
- The dependencies log will capture at least who the project is dependent upon and what they should deliver and when.

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- PM's should also keep details of the actual agreement and when it was made, plus any later variations of this.

RAID LOG

- The RAID log is a key project management tool that allows the stakeholders to see the progress of the project and issues having an impact on the successful implementation of a project.
- It is a structured, consistent tool that facilitates daily project management decisions and sets the agenda for the stakeholder meetings that will provide oversight of the project status and progress.
- A RAID log is a means for managing to project plans, and making sure nothing falls through the cracks.
- It also acts as a source of record for the project, logging events as they happen.
- It is also monitoring tool for key important areas that could negatively impact the project.
- A RAID also acts as a source of accountability as all risks, actions, issues and decisions are recorded with ownership, accountability, responsibility and time.

- The RAID Log should be regularly reviewed and updated in the same way that the main plan is managed.

Sometimes there is confusion over use of the acronym RAID in project management as many organisations who use RAID logs to manage projects have the following alternative meaning where **RAID is an abbreviation for Risks, Actions, Issues and Decisions.**

The Alternative RAID (Risks, Actions, Issues, Decisions) Log Summary

Risks

- The 'Risk' section of the RAID Log lists all your identified risks, scoring each for likelihood and probable impact with each risk having a running log of mitigating actions.
- Your project risks are the "issues waiting to happen."

PRINCE 2 Definition

A "Project Issue" is a term used to cover any concern, query, Request for Change, suggestion or off-specification raised during the project. They can be about anything to do with the project.

- Risk refers to the combined likelihood the event will occur and the impact on the project if it does occur.
- If the likelihood of the event happening and impact to the project are both high, the event is classed as a risk.
- All risks should be logged no matter how small.
- All risks should have an ID number and all risks should be owned by someone who has been involved in the discussion about the specific risk.
- The log includes a description of each risk, full analysis and a plan to manage it.
- In addition all risks should be measured in a standard way with probability and impact.
- In the risk log section, there should be columns also for the risk owner, status, and any dates that may be relevant.

Actions

- However detailed your project plans, PM's will always have unplanned action items come up: follow up items, actions items from meetings, etc.

- So many organisations has an Actions section part of the RAID log to act as 'task bucket' to capture and track these items.
- All actions are logged here from all the project meetings:
 - project boards
 - steering groups
 - risk reviews
 - project reviews
 - team meetings
 - technical reviews
 - stakeholder meetings
 - risk reviews
- As with risks, all actions should have an assigned id, owner and timescale.

Issues

- An issue is something that has gone wrong (deviation from the approved scope, schedule, budget etc.)

- Issues are also risks that have been realised, and have turned into issues.
- As with risks and actions, all issues should have an assigned id, owner and timescale.
- Avoid duplication of actions with issues and the same actions in the actions log.
- Failure to manage issues may result in a poor delivery or even failure.
- The log includes a description of each issue, the impact it is having, its seriousness and actions needed to contain and remove it.

Decisions

- In most projects, PM's will encounter decision points where the sponsor or stakeholders will make decisions about how the project proceeds.
- It is important task to record in all the project-related meetings, everything significant that was agreed, the decisions made and who and when these decisions were made.
- For best practice, decisions made should be allocated an id number as well.

Risk Management

2

“No one can whistle a symphony. It takes a whole orchestra.”

— **H.E. Luccock**

Risk Management

The risk management process can be simplified according to the characteristics of the project:

- Anticipated level of risk
- Time
- Resources available
- Perceived need
- Organizational policy

Example IT Project Risks

Projects often fail because of risks are not managed correctly. IT project risks can arise from the following.

- Ineffective or lack of senior sponsorship
- Lack of alignment with an organisation's strategic objectives
- Lack of a valid, ongoing business case
- Fragmented project plans

- Poorly defined project mission and task
- No clear process for escalating risks to senior management
- Insufficient reporting to support top management decisions
- Ineffective enforcement of project controls and policies
- Conflict between line and project managers
- Projects do not meet deadlines and / or milestones
- Lack of standardised reports and reporting frameworks
- Lack of clear understanding of risks when using new or emerging technologies

Successful Project Risk Management Factors

- All significant risks to the success of the project are identified
- Identified risks are understood, with both the range of potential consequences they represent and the likelihood of values in that range being determined as far as is necessary for decision-making
- Assessment is undertaken of individual risks relative to the other risks to support priority setting and resource allocation
- Strategies for treating the risks take account of opportunities to address more than one risk
- The process itself and the risk treatment strategies are implemented cost-effectively

The Risk Management Process

It is important to implement a risk management process:

1. Establish the Context

Establishing the context enables to create a statement of programme objectives and criteria for success

The Actions

- Review organizational and project environment where the risk assessment is taking place
- Specify the main objectives and outcomes required of the programme
- Identify a set of success criteria where the impacts of identified risks can be measured
- Define a set of key elements for structuring the risk identification and assessment process

Outputs

- A concise statement of the programme objectives
- A list of specific criteria for success

- ## The objectives and scope for the risk assessment

2. Identify the Risks

This step in the process determines all the possible risks to a successful outcome of the project.

- Risk identification determines what might happen that could affect the objectives of the project
- How those things might happen
- Brainstorming is a preferred method because of its flexibility and capability

John Parkinson	High	Med	Low	1. Consultation with relevant stakeholders 2. Early engagement with relevant stakeholders 3. Identify engagement issues 4. Develop engagement plan 5. Engage stakeholders early in decision making process	High	Med	Low	Identify GPs
John Parkinson	High	Med	Low		High	Med	Low	Protection cost or further analysis
John Parkinson	High	Med	Low	1. Implement robust GP quality assurance of consultation outputs 2. Early and High level GP engagement on draft report at each stage 3. Engage peer reviewers early in report writing stage for advice	High	Med	Low	
	High	Med	Low	Impacts of extra analysis likely to be both positive and negative. DASH will keep going colleagues closely informed of developments	High	Med	Low	Risk
David Han	High	Med	Low		High	Med	Low	
	High	Med	Low	1. Analysts preparing advice on risks and benefits of different approaches. Forwarding submission to put these options to Ministers. 2. Engaging now with technical consultants to establish availability	High	Med	Low	
David Han	High	Med	Low		High	Med	Low	

Outputs

- Comprehensive list of possible risks to the successful outcome of the project
- A risk register, with risk owners allocated to them Who owns which project
- If there other projects dependent on this project

3. Analyse the Risks

Risk Assessment is to develop agreed priorities for the identified risks.

Approach

- Determines the consequences of each risk, should it arise Assesses the likelihood of those consequences occurring
- Converts the consequence and likelihood ratings to an initial priority for the risk
- Develops agreed risk priorities and inherent risk levels
- Agreed priorities are used to determine where the greatest effort should be focused in treating identified risks

-
- They facilitate structured action planning and resource allocation
 - Generates a prioritized list of risks and a detailed understanding of their impacts upon the success of the project should they occur
 - The consequence and likelihood ratings and the agreed risk priorities are all recorded in the risk register

4. Evaluate the Risks

Risk Assessment is to develop agreed priorities for the identified risks.

Approach

- Determines the consequences of each risk, should it arise Assesses the likelihood of those consequences occurring
- Converts the consequence and likelihood ratings to an initial priority for the risk
- Develops agreed risk priorities and inherent risk levels

- Agreed priorities are used to determine where the greatest effort should be focused in treating identified risks
- They facilitate structured action planning and resource allocation
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- The consequence and likelihood ratings and the agreed risk priorities are all recorded in the risk register

5. Treat the Risks

The purpose of risk treatment is to determine what will be done in response to the risks that have been identified to reduce the overall risk exposure.

- Risk treatment involves identifying the options for reducing the likelihood or consequences of each (Extreme, High or Medium risk)
- Determining the potential benefits and costs of the options
- Selecting the best options for the project

-
- 🌐 Developing and implementing detailed Risk Action Plans
 - 🌐 Risk Action Plan Summaries are usually required for each risk classified as **extreme or high** on the agreed risk priority scale

6. Monitor and Review

Continuous monitoring and review of risks ensures new risks are detected and managed, and that action plans are implemented and progressed effectively.

- 🌐 The main input to this step is the risk watch list of the major risks that have been identified for risk treatment action
- 🌐 The outcomes are as revisions to the risk register, and a list of new action items for risk treatment.

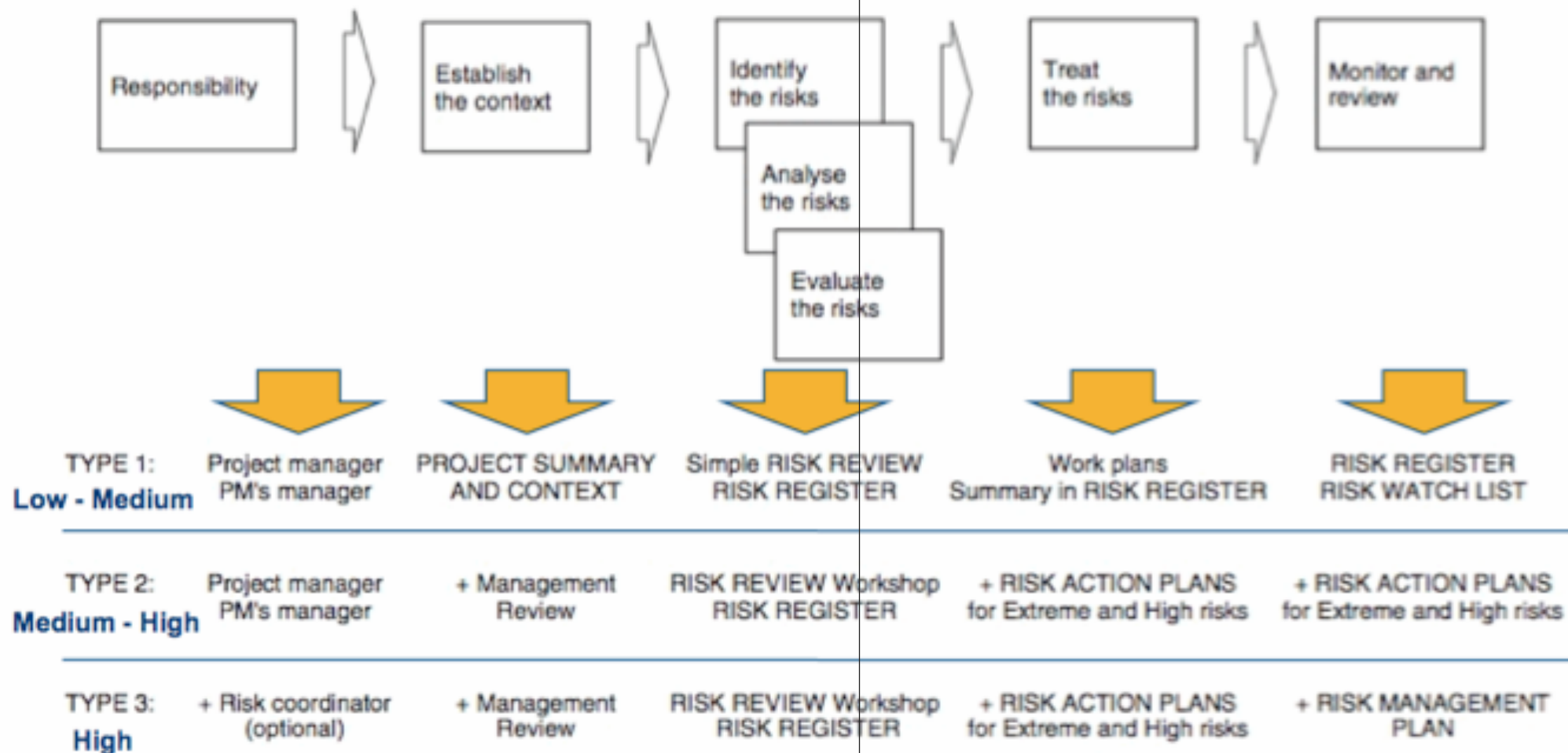
7. Communicate and Consult

Communication and consultation with project stakeholders may be a critical factor in undertaking good risk management

- 🌐 It help owners, clients and end users understand the risks and trade-offs that must be made in a large project
- 🌐 This ensures all parties are fully informed, and thus avoids unpleasant surprises
- 🌐 Regular reporting is an important component of communication
- 🌐 The risk register and the supporting action plans provide the basis for most risk reporting
- 🌐 Reports provide a summary of project risks, the status of treatment actions and an indication of trends in the incidence of risks

Risk Management Process

Risk Management Process



Depending of the classification of the type of risk, use the appropriate process and documentation

Risk Summary Sheet

Risk Summary Sheet

Key elements and issues	No.	Risks	Controls	Initial priority	Agreed priority	Actions and responsibility
Business objectives						
Contractual and legal						
Capital requirements						
Resources						
Timing and schedule						
Technical and performance						
Customers						
Suppliers						
Infrastructure						

Example Risk Summary Sheet for a simplified risk assessment process.

Assumptions Management

3

“No matter how good the team or how efficient the methodology, if we’re not solving the right problem, the project fails.”

— **Woody Williams**

What is an Assumption?

Making an assumption refers to the act of taking for granted that something is in fact true. These are things what the Project Manager expects to have available to proceed with a project usually during early planning phases. Assumptions enable the project to move forward without absolutely certain information.

Example Project Assumptions

- Benefits associated with the project when building a business case
- Resources will be available when and as they are needed
- Stakeholders will take the necessary decisions at the right time
- Required hardware resources will be available when and as they are needed.
- Required business resources will be available when and as they are needed
- Required third party resources will be available when and as they are needed

- The resources available will have the required technical skills for the project
- The way things will work within a product, issues often arise with integration with legacy systems
- There will be access to subject matter experts with the specialized knowledge skills as needed
- Issues will be resolved in a timely manner
- The project organisation described in the project plan will be put in place
- The figures used in preparing the budget estimates are accurate within a given percent
- The scope of the project is limited to that described in the project brief
- Any changes in scope will follow an agreed change process

When Do You Make Assumptions?

During the early phases of a project, a number of assumptions may be made in four specific areas:

- Business Case - when a business case is developed for the justification a project, there will be many

unknowns and assumptions that will form part the initial business case for the project

- Project Scope
- Project Schedule
- Project Budget



Assumption Management

As few projects start with absolute certainty, most projects will be based on many assumptions. If PM's had to wait for absolute certainty, most projects would never get off the starting block within organisations.

- Some assumptions must be made on projects when there is a lack of information available to predict the future accurately.
- Experienced Project Managers do their best efforts to get better at making assumptions and eliminating as many of them as possible.
- As projects are planned and executed, some facts and issues are known, others must be estimated.
- Project Managers can't just hope they will have the necessary resources to complete a project successfully.
- For example, if the required resources are not available, then key project milestones may be missed and the project will fail to achieve a successful outcome.

Project Managers need to make a brief and clear-cut description of any project assumptions related to:

- business
- people
- technology
- expectations
- schedules

The PM will document and communicate these list of those assumptions to key stakeholders.

- Project Managers have to manage and mitigate using informed assumptions and constraints.
- Assumptions apply at all stages of the project and are typically are documented at the start of a project and they are usually filed in a drawer and ignored.
- Assumptions add risk to a project since it is possible that they will turn out to be false.
- Assumptions can impact any part of your project life cycle and resulting solution implementation, so it is important to document and analyse them.

- Assumptions usually carry implications and these should be documented with any resulting actions if they are not met.
- Making assumptions sets benchmarks that are often revisited during the project to aid the project team in staying within scope, on time and within budget.

An Assumption is Not a Constraint

- **Assumptions** are forecasts about what may happen in the future, while constraints are limits on freedom of choice.
- **Constraints** can have a negative effect on the project and are not often under the control of a PM.
- Business constraints are a common type of constraint that limit the project based upon the current organizational environment.
- Constraints are usually focused around time, money and resources for a project.
- When determining assumptions, it may be important to consider any project-related constraints as they may drive the identification of further assumptions
- Constraints need be identified and incorporated into the project plan to ensure that the plan is realistic.

PM's will need to make a description of any major limitations impacting a project including:

- **Budget** - the estimated cost of the project, allocated to tasks, resources and phases as needed to complete the project.
- **Schedule** - estimated tasks and events needed to complete the project, organized into a structured sequence to meet a specified project end date.
- **Resources** - the estimated staff resources needed to complete the project, according to number, type, work hours, and skills.
- **Third Party Suppliers** - the anticipated performance of contractors, vendors and suppliers to deliver goods and services according to contracts and project requirements.
- **Other key factors** - that could affect a project successful outcome.

Project Dependencies

- Dependencies are basically deliverables from other projects which your project needs in order to launch.
- Often dependencies get overlooked and a key factor why a number of projects go off track and miss their milestones and target dates.
- It's important to determine a link between project assumptions and constraints and then identify any dependencies between them.
- Again PM's need to document and communicate the dependencies and use it in developing the project plan.

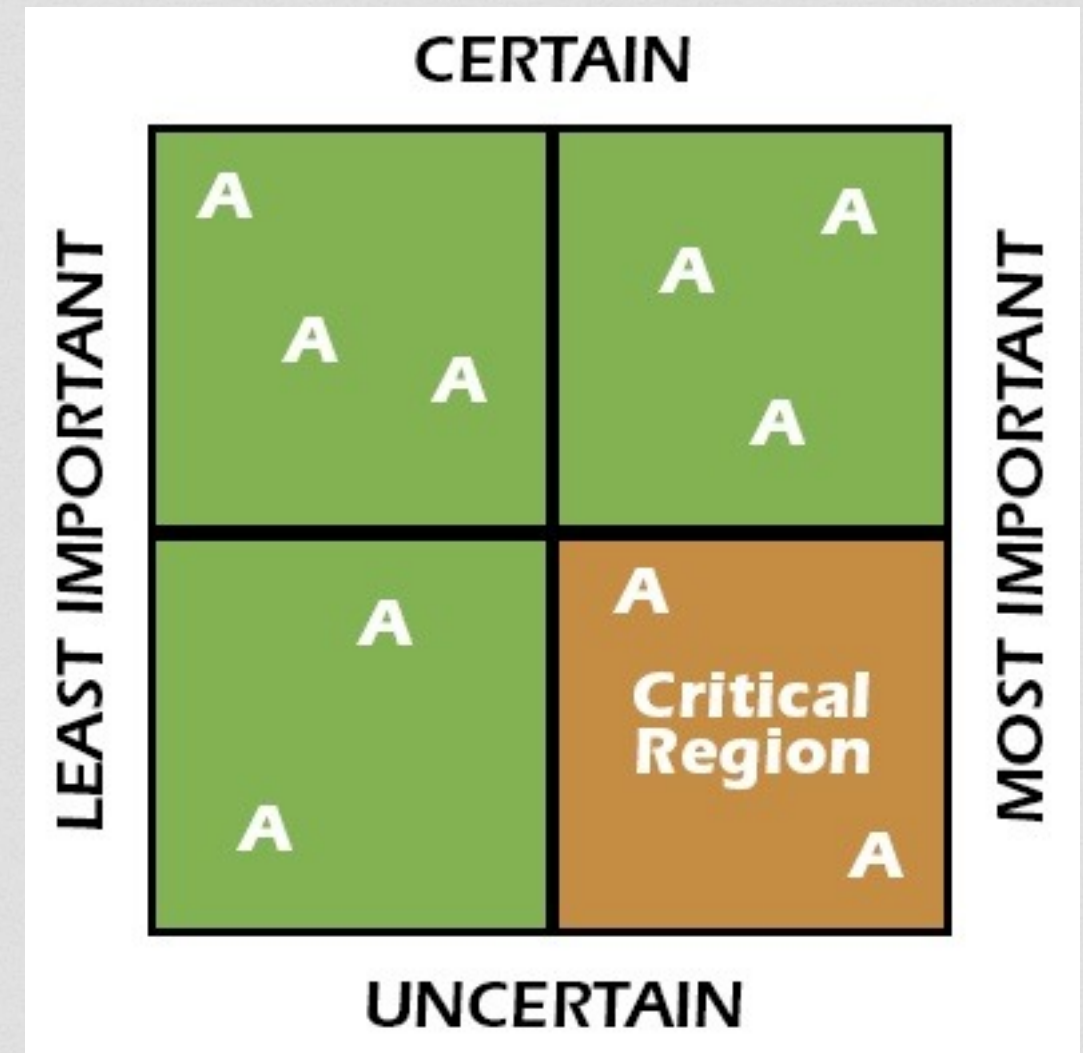
Risks and Assumptions

- The main difference between an assumption and a risk is that when a PM makes an assumption, the PM expects that assumption will happen.
- if the assumption is true, the project will be OK. If the risk happens, then the project is not OK.

The Danger with Assumptions

- ❶ The key danger specific to assumptions is that they become the accepted wisdom.
- ❷ As project changes occur you may not know the exact impact of the change on the project. This is why assumptions must be managed throughout the project life cycle.
- ❸ How to Identify Assumptions
- ❹ The phrase “I think” occurs a number of times during a meeting.
- ❺ Check the confidence level of the team in completing the project. Is there a lack of confidence in the voices of the team when discussing a project.
- ❻ Keep asking the question - what were the original assumptions and are there new ones?
- ❼ Challenge all assumptions and constraints.
- ❽ Ask If any assumption prove to be false what will be the consequences?

Assumption Criticality Matrix



The Assumption Management Process

1) Identify and Challenge

- The first step in the "assumptions" management process is identification.
- Collect all assumptions

2) Assess

- Each must be viewed with an appropriate degree of skepticism.
- Quantify the assumptions as much as possible in order to determine which assumptions have the greatest impact on the pack.
- Assumptions should be evaluated according to confidence level.
- Followed by a related If this assumption is proven incorrect, what will be the likely consequences for the project?

3) Incorporate

- Once assumptions are identified and assessed, they must be incorporated into the relevant portion of the project plan.
- Assumptions, combined with what is known, will drive the formation of the project plan with the following:
 - planned tasks
 - schedule
 - budget
 - resources

4) Control

- Because assumptions have the potential to impact projects negatively, it is the responsibility of project managers to monitor and manage them.
- PM's stop assumptions becoming the accepted wisdom by monitoring them.
- It is necessary to track assumptions to assess their impact on the project and to track their management to be able to challenge them and to

develop contingency plans should they prove to be invalid.

- Assumptions can be simply monitored by regularly reviewing them with the project team.
- In these reviews a PM should ensure that actions are given to follow up any questions arising, and that these actions are tracked.
- By doing this task a PM reduces the likelihood of an assumption becoming the accepted wisdom.
- Initial assumptions are rarely static and as a project evolves, assumptions will be proven true or untrue.
- A PM can limit the impact false assumptions will have on a project by managing them.
- To manage assumptions a PM can use the Risk Management Process.
- The project team should ask what would it mean to the project if the assumption turned out to be false.
- By asking “what would it mean” the project team are understanding the impact if the assumption was false.

- By asking “if the assumption turned out to be false” the project team are gaining an understanding of the probability of the assumption being false.
- Now that a project team has an assessment of impact and probability for the assumption being false, they can record it in the risk register as a risk, and use the risk management process to keep track of it.

5) Review

- Once a project is complete, assumptions should be reviewed as part of an overall "post-project" review process, to evaluate all steps taken for identification, assessment, incorporation and control.

Assumption Classifications

- ☐ Scope
- ☐ Schedule
- ☐ Budget
- ☐ Resources
- ☐ Expectations
- ☐ Sponsorship
- ☐ Customers
- ☐ Technologies
- ☐ Third Parties
- ☐ Other assumptions

Constraint Classifications

- ☐ Schedule
- ☐ Budget
- ☐ Resources
- ☐ Skill Levels
- ☐ Dependencies
- ☐ Legal
- ☐ Policy
- ☐ Technology
- ☐ Other Constraints

Best Practices For Assumption Management

- Assumptions need to be specific and manageable and should be based as much on fact as is reasonably possible at the time that the assumption is made.
- It is vital that areas of uncertainty are recorded and the accuracy of the assumption is increased as more data becomes available.
- Assumptions need to be monitored and managed throughout the project life cycle on an on-going basis in order to review and test any assumptions
- Managing assumptions is directly tied to managing risks because they both relate to unknowns.
- It is a best practice to perform a quick review of key assumptions at the same time you are updating the risks
- Assumptions should be reflected in the Risk Log and reviewed at regular risk meetings
- The Risk Log provides a standard means for recording assumptions and how they were derived;
- Determining the ownership of the assumptions
- Evaluating the stability of and impact on the project if any of the assumptions prove to be true or false;
- Defining the actions necessary to progress and monitor the assumptions;
- Making provisions for conflicting assumptions; and
- Scheduling when assumptions are to be validated and reviewed throughout the life of the
- After a project ends, assumptions may need to be reviewed as they could negatively impact the post-project benefits realisation process.

Issue Management

4

“Even if you are on the right track, you will get run over if you just sit there.”

— **Will Rogers**

Issue Management

Overview

In the life cycle of any project, there will always be unexpected problems and issues that arise. When these issues arise, a project manager has to be ready to deal with them or they will potentially affect the project's outcome.

- Issue management is the process of identifying and resolving issues.
- Problems with staff or suppliers, technical failures, material shortages – these might all have a negative impact on your project.
- Unresolved issues can be a source of conflict that delays or prevents the project team from attaining project goals, milestones, and deliverables.
- Issue Management is designed to minimise the negative effects of issues on a Project.
- Issue Management follows many of the processes applicable to risk management and these two areas are usually considered in tandem.

- Issues arising should be recorded on a Project Issues Log.
- Issue Management addresses obstacles that can hinder project success.
- These obstacles can include such factors as:
 - Differences of opinion
 - Situations to be investigated
 - Unanticipated responsibilities.
- The purpose of issue management is to identify and document these issues and to resolve them by reviewing and carefully considering all relevant information.
- Project issues must be identified, managed and resolved throughout the project in order for the project to be successful.
- Issue management plays an important role in maintaining project stability and efficiency throughout the project lifecycle.
- It is the responsibility of the project manager to effectively manage and monitor issues on a regular basis, follow up with issue owners to ensure

progress is being made towards resolution, and to report on the status of issues.

- In addition to overcoming obstacles to success, effective issue management also contributes to having constructive working relationships among the project stakeholders, including the project team.
- The issue log is a key tool for the project manager in the ongoing tracking and monitoring of issue resolution.

Issue Definition

An issue is basically anything that might affect the project meeting its goals.

- An issue is problem that will impede the progress of the project.
- An issue is a point or matter in question or in dispute, or a point or matter that is not settled and is under discussion or over which there are opposing views or disagreements.

Risk Definition

A risk is a potential occurrence whereas an issue is something that has actually occurred.

A risk is an uncertain event or condition that, if it occurs, has a positive or negative impact on a project's objectives.

Key Issue Questions

- How will a PM assign responsibility for resolving the issue?
- How will a PM know when to escalate an issue to management or the steering committee?
- Which criteria will determine an issue's priority status?
- Who will set the target resolution date?
- How will issues be communicated within the team?
- How will a PM identify different issues if several occur during one project?
- If change orders are needed, how will those be handled?
- When the resolution affects the budget or schedule, what will the update process be, and who will be responsible?

Issue Types

- Issues can be raised by anyone associated with the project and a clear process for raising them should be widely publicised.

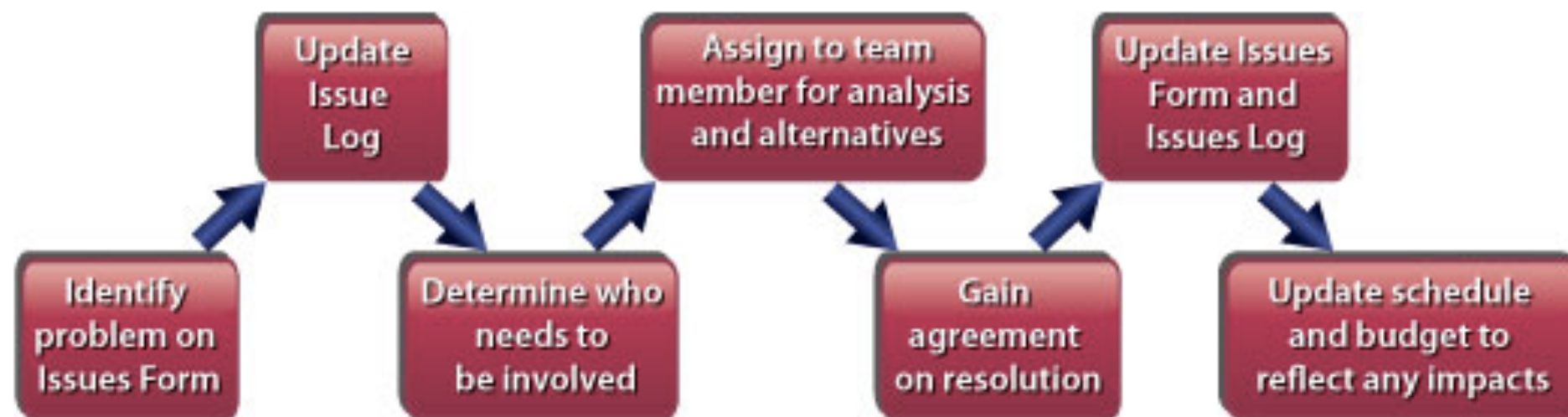
Define the categories of issues that you're likely to encounter. This helps you track issues and assign the right people to resolve them.

Issues may arise from a wide variety of sources, for example:

- Technical issues relating to a technological problem in the project.
- Technical requirements have changed.
- Project is insufficiently funded.
- Lack of visible management sponsorship for the project.
- Ineffective project communications.
- Poor definition of project goals, scope, requirements and deliverables.
- Project management processes not adhered to.
- Business process issues arising from a project's design.
- Business requirements have changed.

-
- Change management issues to scope and timescales that arise from an unplanned requested change to the system.
 - Resource issues to people problems and availability.
 - Project team lack the skills to complete the project.
 - Issues about the size of the project team.
 - Project schedule overly aggressive.
 - Equipment delays have impacted project schedule.
 - Third party issues or "bugs" that need to be reported to an external supplier.
 - Transition activity issues.
 - Budget overrun issues
 - Dependencies issues on underway within the organisation.
 - Stakeholders issues
 - Organisation issues
 - Issues arising from conflicts from project staff.

High Level Issue Management Process



High-level process flow

Why an Issues Log?

Issues need to be recorded when they happen. A project manager creates an issues log as part of a RAID template to provide a tool for reporting and communicating what's happening with the project.

This makes sure that issues are indeed raised, and then investigated and resolved quickly and effectively.

Without a defined process, a project manager risks ignoring issues until it's too late to deal with them successfully.

An issues log has some of the following benefits:

- Provides a useful tool for managing and addressing the issues identified before and during the project
- Identifies and documents actions taken to address the identified issues and their subsequent resolution
- Provides the senior management with a documented framework from which the status of issues can be reported
- Ensures the communication of issues to key stakeholders

- Provides a mechanism for seeking and acting on feedback regarding project issues to encourage the involvement of the key stakeholders.

When to develop a Project Issues Log?

- The Issues Log as part of the RAID template should be created at the start of the project.
- The frequency of issues reporting will vary depending on the size of the project.
- With most projects this may consist of weekly review of any issues that could affect progress.
- The issues log as part of the RAID report forms an integral part of a project.

The Issue Log Format

The Issues Log records as part of the RAID Log details of all the issues identified at the beginning and during the life of the project, the action taken to address each issue and the subsequent results.

This issues log should be maintained throughout the project and updated regularly, as existing issues are closed as a result of successful actions and new issues added as they are identified.

It usually includes:

- 🕒 Date when the issue was raised.
- 🕒 An issue reference number (ID) to identify different issues.
- 🕒 A name for the Issue.
- 🕒 A brief description what the issue concerns like these:
 - 🕒 Technical – Relating to a technological problem in the project.
 - 🕒 Business process – Relating to the project's design.
 - 🕒 Change management – Relating to business, customer, or environmental changes.
 - 🕒 Resource – Relating to equipment, material, or people problems.
 - 🕒 Third party – Relating to issues with vendors, suppliers, or another outside party.
- 🕒 The name of the person who raised this issue.
- 🕒 The date the issue is assigned to someone
- 🕒 Name of the person(s) assigned to solving the issue.

- 🕒 The priority and severity of the issue.that details how bad the consequence would be if the issue is left unsolved.
- 🕒 The status of the issue:
 - 🕒 **Status** – Track the progress of the resolution with a clear label identifying the issue's overall status. Here's an example:
 - 🕒 **Open** – The issue has been identified, but no action has yet been taken.
 - 🕒 **Investigating** – The issue, and possible solutions, are being investigated.
 - 🕒 **Implementing** – The issue resolution is in process.
 - 🕒 **Escalated** – The issue has been raised to management or the project steering committee, and directions or approval of a solution is pending.
 - 🕒 **Resolved** – The resolution has been implemented, and the issue is closed.
- 🕒 A list of the actions performed before the with dates issue is resolved
- 🕒 What the the final resolution was to settle the issue.
- 🕒 The date when the issue is solved.

Always Remember the Basic Questions



Best Practices

- Any potential problem should be surfaced early and dealt with efficiently.
- Proactively manage issues to minimise their affect on a project.
- Make issues visible to the relevant stakeholders.
- An issue escalation process should be determined as a part of the overall issue management planning activities and should be documented.
- All issues, regardless of how minor they seem, should be centrally documented in an issue log.
- Issues should be stated in such a way that it is clear how they can be resolved.
- Use 'traffic lights' when reporting issues. This provides an easy-to-see indication of whether issues are under control. Traffic lights could be used as follows:
 - Red** - Cannot continue before issue is resolved.
 - Yellow** - Resolution in process, and you'll be able to proceed soon.

 **Green** - Resolution implemented, and issue no longer exists.

- If a date for resolution changes, keep both the old date and the new date visible. This helps a project manager spot issues that have been on the log for a long time. Then you can either give them extra attention, or take them off the list if they're no longer important.
-  Issues should be prioritised, assigned specific owners, with next steps and due dates documented. Issue ownership should be communicated clearly to those responsible for action items.
-  Be mindful of the “80/20 rule”, which says that 80% of the project impact will come from approximately 20% of the documented issues. Concentrate the majority of mitigation efforts on issues that pose the greatest potential threat to project success.
-  A regular review of issues and the issue log is a highly recommended practice.
-  The review process should occur daily for complex projects and at least weekly for simple projects.

-  Open issues should be reviewed at each project team status meeting and progress made on the issues should be recorded in the issue log.
-  Closed issues should remain in the issue log as a historical record and to facilitate lessons learned activities.
-  Encourage project team members to resolve issues at the lowest level possible.
-  Engage with stakeholders in issue resolution.
-  The PM should engage personally with affected stakeholders with a specific issue.
-  Always look for an underlying root cause if there are several issues raised. Keep asking “why” is the project having these issues?
-  Update work plans to ensure issue is visible and resolved.
-  Update the project plan if the resolution of the issue has had an impact on the budget or schedule of the project.

Dependency Management

“The P in PM is as much about ‘people management’ as it is about ‘project management’.”

— **Cornelius Fichtner**



Dependency Management

A project dependency is where a task, milestone or activity is dependent on another task or milestone being completed before it can start or be completed.

- It is possible for a project to have interdependencies. This is where tasks, milestones, etc within the same project are dependent on each other.
- The other type of dependency is external. This is where the dependency is on a different project, programme or even business as usual.
- Project dependencies establish the links, and the type of links, between all the tasks of a project.
- There are also dependencies with other projects.
- Project Managers must be able to plan for and manage the dependencies among tasks in their projects.
- The more complex a project is the more dependencies there will be among project tasks that must be planned for.

A project manager manage a project interdependencies as risks.

Dependency Types

Understanding the types of dependencies inherent in the work that needs to be completed is one of the most important elements of creating a strong project schedule.

- 1) Mandatory Dependencies:** These are dependencies that are logic driven e.g. A code module can not be test until after it's written.
- 2) Resource-based Planning Dependencies:** These are dependencies where the task could be accomplished faster or sooner if you had more resources.
- 3) Discretionary Dependencies:** These are tasks that could be scheduled differently, but the Project Manager chooses to schedule this particular order.

- 4) **External Dependencies:** These are dependencies that are outside the control of the project team, but nonetheless must be reflected in the project schedule. Examples of external dependencies include completion of a project milestone that is linked to the completion of a milestone within another project.

The value add of a PMO is in the facilitation and management of external dependencies. This is especially true in larger organisations where multiple projects or even multiple programmes may be active at the same time.

Task Dependency Relationships

Dependency relationships are utilised to link two tasks in the most logical manner possible.

- The valid relationships in MS Project are:
 - Finish-to-Start (FS)** – This represents the default relationship in MS Project. If you do not specify the relationship, FS is assumed. This relationship is utilized to establish a sequential flow of work – this activity can start when the previous activity is completed.
 - Start-to-Start (SS)** – This relationship is utilised when two activities will be launched at the same time. They may end at different times (depending on the duration of each activity), but they can start at the same time.
 - Finish-to-Finish (FF)** – This relationship is utilized when the completion of two activities should be linked together. The two activities may start at different times (again, depending on the duration of each activity), but the completion of the two activities is coordinated.
 - Start-to-Finish (SF)** – This relationship is seldom utilized.

Dependency Log

In a similar way to the management of risks, issues and assumptions, the recording and monitoring dependencies is by using a dependency Log (as part of the RAID template).

This Dependency Log should typically capture:

- 🕒 **Unique Reference** to identify dependency
- 🕒 **Description** to briefly describe the dependency
- 🕒 **Enabling Project Name** which delivers the task or milestone
 - 🕒 **Task Description** details of the exact task that must be delivered
- 🕒 **Dependent Programme Name** which needs the task to be delivered
 - 🕒 **Dependent details of task** that needs the delivery
 - 🕒 **Delivery Date of dependency** that must be delivered by to not cause a delay in dependent project
- 🕒 **Probability** that dependency will not be met in required timeline

- 🕒 **Impact** of dependency not being delivered in required timeline
- 🕒 **Status** of dependency whether open or closed, etc
- 🕒 **Owner** who owns the dependency
- 🕒 **Date Raised** of when

The Capturing of Dependencies

The real skill for a PMO is identifying what are the dependencies as most times that are not obvious even when you have a room full of subject matter experts.

Here are two suggested methods, one is more informal awareness workshop and the other is a process method taken out of Six Sigma.

1. Dependency Awareness Workshop

This is a workshop that can be facilitated by a PMO lead where all the key stakeholders and subject matter experts of key programmes and projects are brought

together to walk through the proposed project to identify dependencies.

the PMO lead will start by stating the purpose of the workshop which is to identify any dependencies between projects.

Each project should provide a one page overview with the following:

- Project name
- Sponsor
- Project Manager
- Start / end dates
- Current status
- Business area / function
- Overview of the project
- Business process being changed
- Platforms being implemented / changed
- Key milestones
- Key issues / risks

- In the workshop, Each project manager will have 15 minutes to briefly discuss their project.
- This will allow other project managers to ask questions and identify potential dependencies
- At the end of the workshop the goal is to have a list of potential dependencies with a set of actions going forward
- After the workshop, the PMO can review the list and determine the milestones of where the dependencies exists.
- The PMO will then publish this list and arrange a follow-up workshop to review the list as a group to align with project managers on either side of a dependency to confirm and agree that the proposed dates are realistic and achievable.
- The output of the follow-up workshop is to have all parties in agreement on the delivery dates of their respective project dependencies.
- Once the dependency dates are aligned and agreed, the PMO will now have a clear view of dependencies and the associated milestones in the different plans.

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- The PMO will track progress against these critical milestones as part of the regular meetings and reporting.

2.Failure Mode Effects Analysis (FMEA)

- This process is an alternative to the previous workshop approach by adopting a best practice from Six Sigma.
- The FMEA is not a new tool. The aerospace industry used the FMEA during the Apollo missions in the 1960s.
- Failure modes and effects analysis (FMEA) is a step-by-step approach for identifying all possible failures in a design, a process, or a product or service.
- “Failure modes” means the ways, or modes, in which something might fail. Failures are any errors or defects, especially ones that affect the customer, and can be potential or actual.
- “Effects analysis” refers to studying the consequences of those failures.

- Failures are prioritized according to how serious their consequences are, how frequently they occur and how easily they can be detected.
- The purpose of the FMEA is to take actions to eliminate or reduce failures, starting with the highest-priority ones.
- Failure modes and effects analysis also documents current knowledge and actions about the risks of failures, for use in continuous improvement.
- FMEA is used during design to prevent failures.
- Later it’s used for control, before and during ongoing operation of the process.
- Ideally, FMEA begins during the earliest conceptual stages of design and continues throughout the life of the product or service.

When to Use FMEA

- When a process, product or service is being designed or redesigned, after quality function deployment.
- When an existing process, product or service is being applied in a new way.

- Before developing control plans for a new or modified process.
- When improvement goals are planned for an existing process, product or service.
- When analyzing failures of an existing process, product or service.
- Periodically throughout the life of the process, product or service

FMEA Procedure

- Assemble a cross-functional team of people with diverse knowledge about the process, product or service and customer needs.
- Functions that can be included are: design, development, quality, testing, reliability, maintenance, purchasing, third party vendors and customer service.
- **Identify the scope of the FMEA.**
 - Is it for concept, system, design, process or service?
 - What are the boundaries?
 - How detailed should it be?

- Use flowcharts to identify the scope and to make sure every team member understands it in detail.
- Fill in the identifying information at the top of a FMEA form.
- **Identify the functions of your scope.**
 - Ask, "What is the purpose of this system, design, process or service?"
 - What do our customers expect it to do?"
 - Name it with a verb followed by a noun.
 - Usually you will break the scope into separate subsystems, items, parts, assemblies or process steps and identify the function of each.
- **For each function**, identify all the ways failure could happen.
 - These are potential failure modes. If necessary, go back and rewrite the function with more detail to be sure the failure modes show a loss of that function.
- **For each failure mode**, identify all the consequences on the system, related systems, process, related processes, product, service, customer or regulations.

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- These are potential effects of failure.
 - Ask, “What does the customer experience because of this failure?”
 - What happens when this failure occurs?”
 - Determine how serious each effect is.**
 - This is the severity rating, or S.
 - Severity is usually rated on a scale from 1 to 10, where 1 is insignificant and 10 is catastrophic.
 - If a failure mode has more than one effect, write on the FMEA table only the highest severity rating for that failure mode.
 - For each failure mode**, determine all the potential root causes.
 - Use tools classified as cause analysis tool, as well as the best knowledge and experience of the team.
 - List all possible causes for each failure mode on the FMEA form.
 - For each cause**, determine the occurrence rating, or O.

- This rating estimates the probability of failure occurring for that reason during the lifetime of your scope.
- Occurrence is usually rated on a scale from 1 to 10, where 1 is extremely unlikely and 10 is inevitable. On the FMEA table, list the occurrence rating for each cause.
- For each cause**, identify current process controls.
 - These are tests, procedures or mechanisms that you now have in place to keep failures from reaching the customer.
 - These controls might prevent the cause from happening, reduce the likelihood that it will happen or detect failure after the cause has already happened but before the customer is affected.
- For each control**, determine the detection rating, or D.
 - This rating estimates how well the controls can detect either the cause or its failure mode after they have happened but before the customer is affected.
 - Detection is usually rated on a scale from 1 to 10, where 1 means the control is absolutely certain to detect the problem and 10 means the control is certain not to detect the problem (or no control exists).

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- 🔍 On the FMEA table, list the detection rating for each cause.

🔍 **Is this failure mode associated with a critical characteristic?**

- 🔍 (Critical characteristics are measurements or indicators that reflect safety or compliance with government regulations and need special controls.)

- 🔍 If so, a column labeled “Classification” receives a Y or N to show whether special controls are needed. Usually, critical characteristics have a severity of 9 or 10 and occurrence and detection ratings above 3.

🔍 **Calculate the risk priority number**, or RPN, which equals $S \times O \times D$.

- 🔍 Also calculate Criticality by multiplying severity by occurrence, $S \times O$.

- 🔍 These numbers provide guidance for ranking potential failures in the order they should be addressed.

🔍 **Identify recommended actions.**

- 🔍 These actions may be design or process changes to lower severity or occurrence.
- 🔍 They may be additional controls to improve detection.

- 🔍 Also note who is responsible for the actions and target completion dates.

🔍 **As actions are completed**

- 🔍 Note results and the date on the FMEA form.
- 🔍 Also, note new S, O or D ratings and new RPNs.

NOTE

The use of FMEA is not for the faint hearted. Reactions within organisations around the use of FMEA vary from "waste of time, lack of support" and "don't want anything to do with it" all the way to "powerful tool, effective way to prevent problems" and "needs to be done across the board."

For an organisation to use FMEA successfully, the following must be in place:

- 🔍 An effective FMEA process
- 🔍 Strong management sponsorship
- 🔍 Best -practice FMEA application
- 🔍 Trained and experienced FMEA resources.

FEMA Form Template Example

Function	Potential Failure Mode	Potential Effects(s) of Failure	S	Potential Cause(s) of Failure	O	Current Process Controls	D	R P N	C R I T	Recommended Action(s)	Responsibility and Target Completion Date	Action Results					
												Action Taken	S	O	D	R P N	C R I T
Dispense amount of cash requested by customer	Does not dispense cash	Customer very dissatisfied	8	Out of cash	5	Internal low-cash alert	5	200	40								
		Machine jams			3	Internal jam alert	10	240	24								
		Incorrect entry to demand deposit system			2	None	10	160	16								
		Discrepancy in cash balancing		Power failure during transaction													
	Dispenses too much cash	Bank loses money	6	Bills stuck together	2	Loading procedure (riffle ends of stack)	7	84	12								
		Discrepancy in cash balancing		Denominations in wrong trays	3	Two-person visual verification	4	72	18								
	Takes too long to dispense cash	Customer somewhat annoyed	3	Heavy computer network traffic	7	None	10	210	21								
				Power interruption during transaction	2	None	10	60	6								

